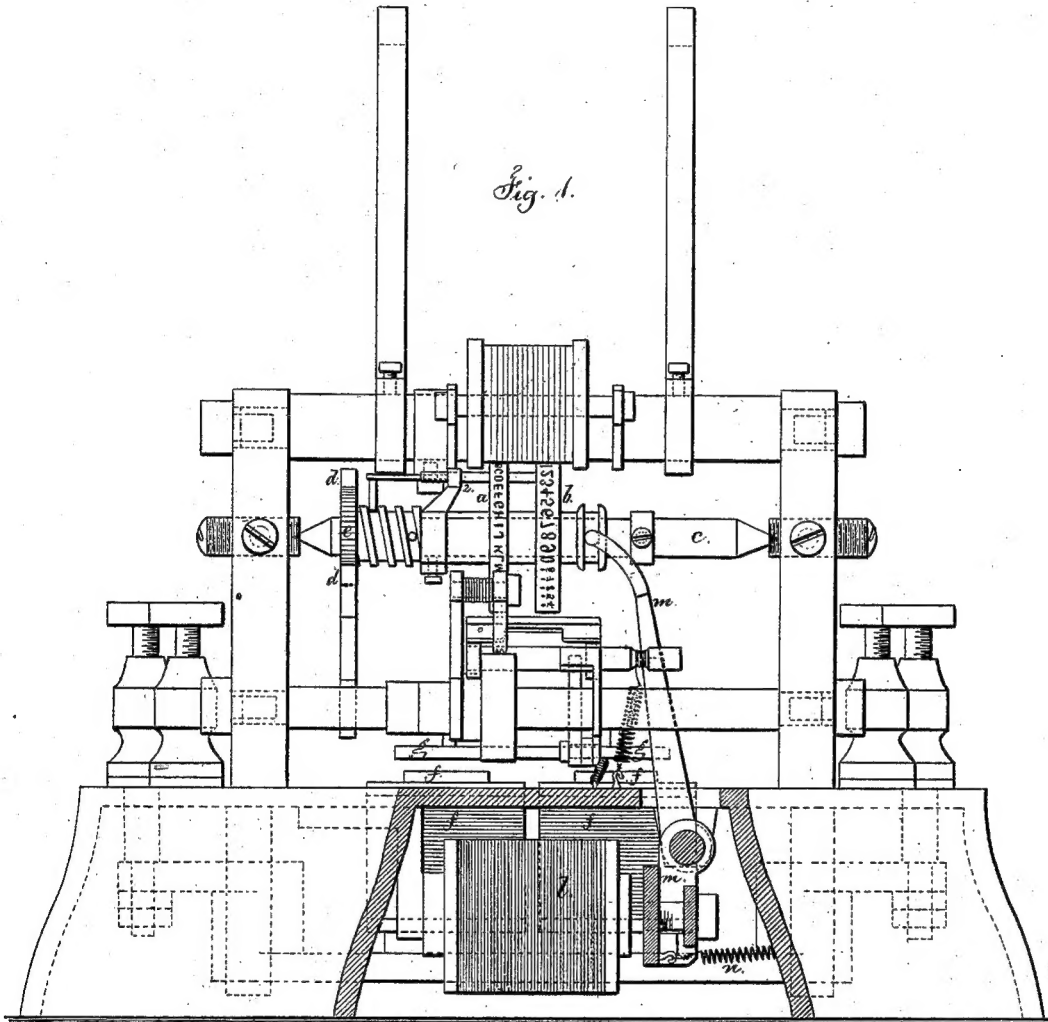


T. A. EDISON.

Improvement in Printing Telegraph Instruments.

No. 131,342.

Patented Sep. 17, 1872.



Chas. H. Smith
Geo. W. Walker.

Witnesses.

INVENTOR
Thos^d A. Edison,
Per. Lemuel W. Serrell
ATTY.

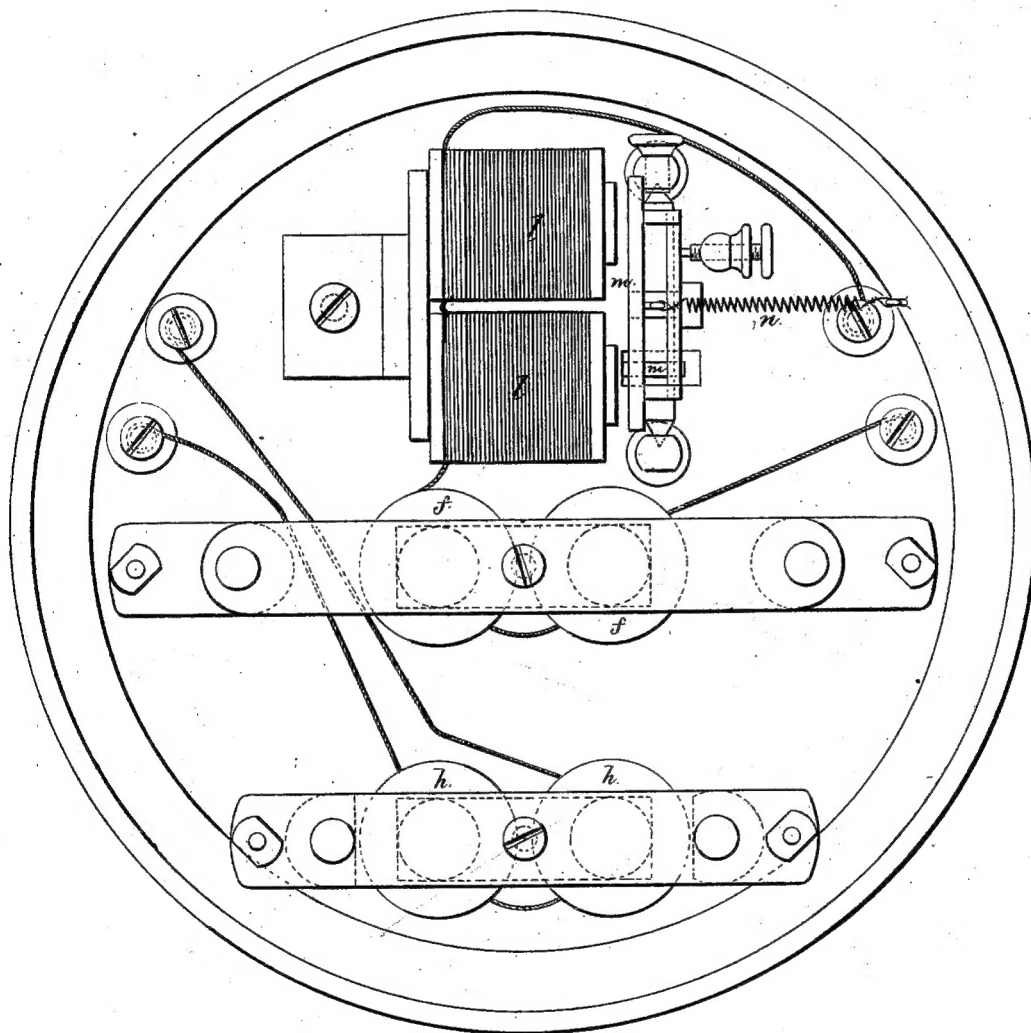
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Fig. 2.



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Witnesses.

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Per. *L. M. Serrell* ATTY.

UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN PRINTING-TELEGRAPH INSTRUMENTS.

Specification forming part of Letters Patent No. 131,342, dated September 17, 1872.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Printing-Telegraphs; and the following is declared to be a correct description of the same.

The present invention applies to improvements applicable with other printing-telegraphs heretofore made and patented by me.

I make use of two type-wheels sliding endwise of the actuating-shaft, the one having figures or fractions, or both, and the other letters, and these are positioned so that when the circuit to the type-wheel magnet is closed and held during the energizing of the printing-magnet by a separate electric circuit, the letter-wheel will be drawn by a magnet into position for printing, and when the circuit is broken the figure-wheel will assume its position over the paper to be impressed. The magnet that gives endwise movement to the type-wheels, not being energized, allows a spring to give the reverse movement. By this means the letter and type wheels are moved around to the required point; and if a letter is to be impressed, the circuit is kept closed; or if a figure, the circuit is broken before impression, or the reverse. In this manner circuit-changers and polarized bars can be dispensed with and the end movement of the type-wheel is independent of any unison or changing points, as either wheel can be brought into or removed from action at any point of the revolution.

In the drawing, Fig. 1 is an elevation; and Fig. 2 is an inverted plan of the instrument.

The type-wheels *a b* are connected by a sleeve and slide freely endwise of the shaft *c*, and are guided by the rod 2, that also serves to communicate to the wheels the rotary motion of the shaft. The step-by-step movement of the type-wheels is given by the pallets *d*, acting upon the ratchet-wheel *e*, and *f* is the type-wheel magnet, the armature *g* of which moves the lever and pallets *d*. The printing-magnet *h* is in a separate circuit from the type-wheel-magnet, so that the printing is effected

independently of the type-wheel magnet, but switches or polarized bars might be employed to direct the current through the magnet employed to shift the type-wheel, if desired. The type-wheel shifting-magnet *l* is provided with an armature and lever, *m*, the upper end of such lever being connected with the type-wheel sleeve by a fork and groove or other convenient means. When the magnet *l* is energized it shifts the type-wheels in one direction by sliding them endwise of the shaft, but when the electro-magnet *l* is not energized the spring *n* returns the parts to their former position. The magnets *l* and *f* are shown in the same electric circuit, and the magnet *l*, acting the most slowly, may hold the parts in position while the type-wheel is being set. Hence the impression will be on the letter-wheel *a*, with a closed circuit; but if the circuit of *l* is opened the type-wheels will be moved endwise, and bring the figure-wheel *b* into position for printing. If the ratchet and pawls forming the step-by-step movement are constructed to move one-half a tooth at each vibration in opposite directions, then the types on one wheel will have to be in line with the spaces in the other.

I claim as my invention—

1. Two type-wheels, sliding endwise of the shaft, in combination with an electro-magnet, to move such type-wheels in one direction, and a spring, or its equivalent, to return the type-wheels to their former position, substantially as set forth.

2. An electro-magnet in the same circuit as the printing-magnet, and operating to give end motion to two type-wheels when the circuit is closed, in combination with a magnet in a separate circuit, to give the impression, substantially as set forth.

Signed by me this 9th day of May, A. D. 1872.

T. A. EDISON.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.